

# PATENT COOPERATION TREATY

# PCT

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY (Chapter I of the Patent Cooperation Treaty)

(PCT Rule 44bis)

Applicant's or agent's file reference ICOT/P30389PC	FOR FURTHER ACTION		See item 4 below
International application No. PCT/GB2004/001380	International filing date ( <i>day/month/year</i> ) 29 March 2004 (29.03.2004)	Priority date ( <i>day/month/year</i> ) 02 December 2003 (02.12.2003)	
International Patent Classification (8th edition unless older edition indicated) See relevant information in Form PCT/ISA/237			
Applicant IMPERIAL COLLEGE INNOVATIONS LIMITED			

- This international preliminary report on patentability (Chapter I) is issued by the International Bureau on behalf of the International Searching Authority under Rule 44 bis.1(a).
- This REPORT consists of a total of 8 sheets, including this cover sheet.  
  
In the attached sheets, any reference to the written opinion of the International Searching Authority should be read as a reference to the international preliminary report on patentability (Chapter I) instead.
- This report contains indications relating to the following items:
 

<input checked="" type="checkbox"/> Box No. I	Basis of the report
<input checked="" type="checkbox"/> Box No. II	Priority
<input checked="" type="checkbox"/> Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
<input type="checkbox"/> Box No. IV	Lack of unity of invention
<input checked="" type="checkbox"/> Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
<input type="checkbox"/> Box No. VI	Certain documents cited
<input type="checkbox"/> Box No. VII	Certain defects in the international application
<input type="checkbox"/> Box No. VIII	Certain observations on the international application
- The International Bureau will communicate this report to designated Offices in accordance with Rules 44bis.3(c) and 93bis.1 but not, except where the applicant makes an express request under Article 23(2), before the expiration of 30 months from the priority date (Rule 44bis .2).

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland  Facsimile No. +41 22 740 14 35	Date of issuance of this report 07 June 2006 (07.06.2006)
	Authorized officer  Nora Lindner  Telephone No. +41 22 338 89 65

# PATENT COOPERATION TREATY

REC'D 01 SEP 2004

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From the  
INTERNATIONAL SEARCHING AUTHORITY

## PCT

To:

see form PCT/ISA/220

### WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY (PCT Rule 43bis.1)

Date of mailing  
(day/month/year) see form PCT/ISA/210 (second sheet)

Applicant's or agent's file reference  
see form PCT/ISA/220

**FOR FURTHER ACTION**  
See paragraph 2 below

International application No.  
PCT/GB2004/001380

International filing date (day/month/year)  
29.03.2004

Priority date (day/month/year)  
02.12.2003

International Patent Classification (IPC) or both national classification and IPC  
A61K31/5575, A61P15/06

Applicant  
IMPERIAL COLLEGE INNOVATIONS LIMITED

**1. This opinion contains indications relating to the following items:**

- ☒ Box No. I Basis of the opinion
- ☒ Box No. II Priority
- ☒ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

**2. FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will usually be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA"). However, this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of three months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

**3. For further details, see notes to Form PCT/ISA/220.**

Name and mailing address of the ISA:



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**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY**

International application No.  
PCT/GB2004/001380

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**Box No. I Basis of the opinion**

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1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.  
☐ This opinion has been established on the basis of a translation from the original language into the following language , which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).
2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
  - a. type of material:  
☐ a sequence listing  
☐ table(s) related to the sequence listing
  - b. format of material:  
☐ in written format  
☐ in computer readable form
  - c. time of filing/furnishing:  
☐ contained in the international application as filed.  
☐ filed together with the international application in computer readable form.  
☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY**

International application No.  
PCT/GB2004/001380

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**Box No. II    Priority**

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1. ☒ The following document has not been furnished:

☒ copy of the earlier application whose priority has been claimed (Rule 43*bis*.1 and 66.7(a)).

☐ translation of the earlier application whose priority has been claimed (Rule 43*bis*.1 and 66.7(b)).

Consequently it has not been possible to consider the validity of the priority claim. This opinion has nevertheless been established on the assumption that the relevant date is the claimed priority date.

2. ☐ This opinion has been established as if no priority had been claimed due to the fact that the priority claim has been found invalid (Rules 43*bis*.1 and 64.1). Thus for the purposes of this opinion, the international filing date indicated above is considered to be the relevant date.

3. Additional observations, if necessary:

**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY**

International application No.  
PCT/GB2004/001380

**Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability**

The questions whether the claimed invention appears to be novel, to involve an inventive step (to be non obvious), or to be industrially applicable have not been examined in respect of:

- ☐ the entire international application,
- ☒ claims Nos. 37

because:

- ☒ the said international application, or the said claims Nos. 37 regarding industrial applicability relate to the following subject matter which does not require an international preliminary examination (*specify*):

**see separate sheet**

- ☐ the description, claims or drawings (*indicate particular elements below*) or said claims Nos. are so unclear that no meaningful opinion could be formed (*specify*):
- ☐ the claims, or said claims Nos. are so inadequately supported by the description that no meaningful opinion could be formed.
- ☐ no international search report has been established for the whole application or for said claims Nos.
- ☐ the nucleotide and/or amino acid sequence listing does not comply with the standard provided for in Annex C of the Administrative Instructions in that:
  - the written form ☐ has not been furnished
  - ☐ does not comply with the standard
  - the computer readable form ☐ has not been furnished
  - ☐ does not comply with the standard
- ☐ the tables related to the nucleotide and/or amino acid sequence listing, if in computer readable form only, do not comply with the technical requirements provided for in Annex C-*bis* of the Administrative Instructions.
- ☐ See separate sheet for further details

**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY**

International application No.  
PCT/GB2004/001380

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**Box No. V Reasoned statement under Rule 43b/s.1(a)(I) with regard to novelty, inventive step or  
Industrial applicability; citations and explanations supporting such statement**

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**1. Statement**

Novelty (N)	Yes: Claims	4,5,8,9,11-13,15-31,34,35
	No: Claims	1-3,6,7,10,14,32,33,36,37
Inventive step (IS)	Yes: Claims	
	No: Claims	1-37
Industrial applicability (IA)	Yes: Claims	36
	No: Claims	

**2. Citations and explanations**

**see separate sheet**

**Re Item III**

**Non-establishment of opinion with regard to novelty, inventive step and industrial applicability**

- 1) Claim 37 relates to subject-matter considered by this Authority to be covered by the provisions of Rule 67.1(iv) PCT. Consequently, no opinion will be formulated with respect to the industrial applicability of the subject-matter of this claim (Article 34(4)(a)(I) PCT).

**Re Item V**

**Reasoned statement with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

- 1) Reference is made to the following documents:  
D1: LAPPAS MARTHA ET AL: "Nuclear factor kappa B regulation of proinflammatory cytokines in human gestational tissues in vitro" BIOL. REPRODUCTION, 67(2) 2002, p.668-673, XP002291976 ISSN: 0006-3363  
D2: DATABASE EMBASE [Online] ELSEVIER SCIENCE PUBLISHERS, AMSTERDAM, NL; 2001, STRAUS D S ET AL: "Cyclopentenone prostaglandins: New insights on biological activities and cellular targets" XP002291978 Database accession no. EMB-2001144978  
D3: LAPPAS M ET AL: "Regulation of proinflammatory cytokines in human gestational tissues by peroxisome proliferator-activated receptor-[gamma]: Effect of 15-deoxy-[delta]<12,14>-PGJ2 and troglitazone" J. CLINICAL ENDOCRINOLOGY AND METABOLISM, US, 87(10) 2002, p.4667-4672, XP002291977 ISSN: 0021-972X

Unless indicated otherwise, the relevant passages are those mentioned in the search report.

- 2) Novelty (Art. 33(2) PCT)  
2.1 Document D1 discloses that 15d-PGJ2 significantly reduces the release of LPS-induced pro-inflammatory cytokines in placental, amnion and choriodecidual tissues and suppresses NF- $\kappa$ B DNA-binding activity from all tissues. D1 thus concludes that this anti-inflammatory activity in human gestational tissues would be expected to favour the maintenance of pregnancy.

This disclosure is novelty-destroying for the subject-matter of claims 1-3, 6, 7, 10, 14, 32, 33, 36 and 37.

3) Inventive step (Art. 33(3) PCT)

3.1 Document D3, which is considered to represent a relevant state of the art, discloses that the control of NF- $\kappa$ B activation in gestational tissues may provide a therapeutic strategy for reducing the release of proinflammatory mediators in infection associated preterm labour.

The subject-matter of claims 1 and 2 differs from this in that a cyclopentenone prostaglandin is used for delaying the onset of labour and/or for reducing an inflammatory response in the reproductive system of a female.

The problem to be solved by the present application may therefore be regarded as finding compounds able to control NF- $\kappa$ B activation in gestational tissues in order to delay the onset of labour and/or to reduce an inflammatory response in the reproductive system of a female.

Document D2 discloses that the cyclopentenone prostaglandin family possesses potent anti-inflammatory activity and that e.g. 15d-PGJ2 exerts its anti-inflammatory activity through inhibition of the NF- $\kappa$ B mediated transcriptional activation.

Therefore, in view of D3 and D2, it would have been obvious for the skilled person to consider the use of a cyclopentenone prostaglandin for delaying the onset of labour and/or for reducing an inflammatory response in the reproductive system of a female.

The subject-matter of claims 1 and 2 thus does not appear to involve any inventive step in view of D2 and D3.

3.2 The subject-matter of dependent claims 4, 5, 8, 9, 11-13, 15-31 and 34-35 appears to be new but it is not apparent for which technical problem it would provide an inventive solution.

4) For the assessment of the present claim 37 on the question whether it is industrially applicable, no unified criteria exist in the PCT Contracting States. The patentability can also be dependent upon the formulation of the claim. The EPO, for example, does not recognize as industrially applicable the subject-matter of claims to the use of a compound in medical treatment, but may allow, however, claims to a known compound for first use in medical treatment and the use of such a compound for the manufacture of a medicament for a new medical treatment.